IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appl. No. : 10/082,956 Confirmation No. 7018
Appellants : John W. Putnam et al.
Filed : February 26, 2002
TC/A.U. : 1711
Examiner : Rachel F. Gorr

Docket No. : EH-10252B(02-216)
Customer No. : 34704

MS Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

APPEAL BRIEF

Dear Sir:

This is an appeal to the Board of Patent Appeals and Interferences from the final rejection of claims 1 and 4 – 7, dated April 28, 2003, issued by the Primary Examiner in Group Art Unit 1711.

REAL PARTY IN INTEREST

The real party in interest is United Technologies Corporation of Hartford, Connecticut.

RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellants, Appellants' legal representative, or Assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

STATUS OF CLAIMS

Claims 1 and 4 – 7 stand rejected and are on appeal. Claims 2, 3, and 8 – 26 have been cancelled. Appendix A attached hereto is a copy of the claims on appeal.

STATUS OF AMENDMENTS

No amendment was filed subsequent to the issuance of the final rejection. A terminal disclaimer was filed subsequent to the issuance of the final rejection. As a result of the filing of the terminal disclaimer, the rejection on grounds of obvious type double patenting has been overcome. See Advisory Action mailed September 9, 2003, paragraph 3.

SUMMARY OF THE INVENTION

The present invention relates to an improved polyurethane compound which has utility as a potting compound in fan exit guide assemblies of commercial gas turbine engines. See page 1, lines 7 – 10 of the specification. The polyurethane compound of the present invention has improved quality, manufacturing properties, and adhesive strength. Further, the polyurethane compound can be mixed in manufacturing friendly automated equipment and can be packaged without the introduction of air. See page 2, lines 2 – 16 of the specification.

In accordance with the present invention, a polyurethane compound or system is provided which contains a formulation of polyurethane prepolymers mixed with an aromatic amine curing agent in a volumetric mix ratio of from about 0.9:1 to about 1:1. The formulation of polyurethane prepolymers consists of a blend of different polyethers based on diphenylmethane diisocyanate or, in other words, a blend of prepolymers made from polyethers and diphenylmethane diisocyanate. The aromatic amine curing agent preferably comprises a blend of oligomeric diamines and an aromatic diamine with a catalytic component. Both of the blends, when in an uncured state, are liquid at room temperature. Polyether type prepolymers are important for moisture and solvent resistance. Polyurethane based MDI prepolymers or MDI polyurethane prepolymers are important for health and safety reasons, for being liquid at room temperature, and for offering better adhesion properties. The aromatic amine curing agent is important for best thermal stability and moisture resistance. See page 2, lines 17 – 36 of the specification.

The polyurethane prepolymer blend is a blend of different polyethers based on diphenylmethane diisocyanate, which blend has an NCO content in the range of from about 11.5% to about 14.5%, preferably from about 12% to 14%, and most preferably about 13%. As used in the application, the term "NCO content" means the grams of NCO per gram of prepolymer. See page 3, lines 4 – 10 of the specification.

The different polyethers which are used to form the blend preferably comprises two types of diphenylmethane diisocyanates. The first type of polyether has a NCO content in the range of from about 13.5% to about 16.5%, preferably in the range of from about 14% to 16%, and most preferably about 15%, a density of about 1.2 g/cm^3, and an equivalent weight of about 286 g/mol. See page 3, lines 25 – 30 of the specification. The second type of polyether has a NCO content in the range of from about 9.7% to 12.7%, preferably from about 10.2% to 12.2%, and most preferably about 11.2%, a density of about 1.06 g/cm^3, and an equivalent weight of about 375 g/mol. See page 4, lines 1 – 5 of the specification.

The polyurethane prepolymer formulation is prepared by combining the two polyether types at room temperature, stirring them to obtain a homogeneous solution, de-aerating at room temperature, and handling using standard dry conditions for moisture sensitive urethanes. The two polyethers are mixed in volumetric amounts sufficient to provide the resulting blend with the aforementioned NCO content. See page 4, lines 7 – 14 of the specification.

The aromatic amine curing agent is formed from two oligomeric aromatic diamines and a third aromatic diamine. See page 4, lines 19 – 21 of the specification. The first of the oligomeric diamines preferably has a density of about 1.04 g/cm^3 and an equivalent weight of about 235 g/mol. The second of the oligomeric diamines preferably has a density of about 1.04 g/cm^3 and an equivalent weight of about 415 g/mol. The third diamine is preferably characterized by chlorine groups attached to it and has a density of 0.95 g/cm^3 and an equivalent weight of about 190 g/mol. See page 4, line 33 to page 5, line 18 of the specification.

The aromatic amine curing agent is formed by heating the second oligomeric diamine to a temperature of 180 degrees Fahrenheit to melt the semisolid. The third amine is added and the mixture is heated to 180 degrees Fahrenheit until the third amine is completely dissolved. The first amine is then added and heated to 180 degrees Fahrenheit until the first amine is completely dissolved. The mixture is then cooled to room temperature and used for packaging. At room temperature, the mixture is a flowing liquid. See page 5, lines 19 – 31 of the specification.

The polyurethane prepolymer blend and the aromatic amine curing agent, when in an uncured state, are both liquid at room temperature. This allows them to be prepackaged in cartridges without the introduction of air into the cartridges. This greatly reduces the number of voids in the final part and leads to the production of higher quality parts. The fact that both components are liquid also allows them to be mixed in a manufacturing friendly automated

equipment. To form the final polyurethane compound, the blended polyurethane prepolymer and the blended amine curing agent can be passed through a mixing nozzle in a volumetric mix ratio of blended polyurethane prepolymer to blended amine curing agent in the range of from about 0.9:1 to about 1:1, preferably from about 0.95:1 to 1:1. See page 5, line 32 to page 6, line 11 of the specification.

The polyurethane compound formed by the blended components possesses extremely high adhesive strength to aluminum, titanium, polyetherimide, epoxy/graphite composites, and other aerospace materials. The polyurethane compound also has good damping characteristics for gas turbine engine applications. Still further, the polyurethane compound has good heat resistance up to 250 degrees Fahrenheit and is resistant to most gas turbine engine fluids. See page 6, lines 12 – 23 of the specification.

PRIOR ART RELIED UPON BY EXAMINER

Patent No.	Patentee	Issue Date
4,910,279	Gillis et al.	March 20, 1990
5,223,599	Gajewski	June 29, 1993

Ulrich, Chem. Tech. of Isocyanates, 1996, p. 368

REJECTIONS OF RECORD ON APPEAL

1. Claims 1 and 4 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,223,599 to Gajewski in view of the Ulrich publication

2. Claims 1 and 4 – 7 stand rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,910,279 to Gillis et al.

ISSUES

1. Is the rejection of claims 1 and 4 on obviousness grounds proper, and if proper, does it teach or suggest the claimed invention.

2. Is the subject matter of claims 1 and 4 – 7 anticipated by the '279 patent to Gillis et al.

GROUPING OF CLAIMS

Claims 1 and 4 – 7 do not stand or fall together. Each claim is believed to be independently patentable.

ARGUMENT

1. *Patentability of Claims 1 and 4 over Gajewski over Ulrich*

Claim 1 on appeal is directed to a polyurethane compound comprising a first component and a second component. The first component consists of a blend of different polyether based MDI prepolymers. Each of the prepolymers has a different diphenylmethane diisocyanate content. The second component comprises an amine curing agent consisting of a blend of diamines.

The rejection of claims 1 and 4 over Gajewski and Ulrich fails because the Examiner has failed to set forth a *prima facie* case of obviousness. As noted by the Examiner, Gajewski differs from the subject matter of claim 1 by showing diphenylmethane diisocyanate in a list with six other preferred diisiocyanates for making prepolymers. The Examiner notes that in the examples, Gajewski uses TDI. Thus, the Examiner recognizes that Gajewski does not teach or suggest the claimed first component having different diphenylmethane diisocyanate contents.

The Examiner attempts to cure this deficiency in Gajewski by taking the position that it would be obvious to replace TDI with MDI in polyurethanes in view of the Ulrich publication. The rejection fails because Ulrich is non-enabling in so far as manufacturing polyurethane compounds of the type set forth in claim 1. Ulrich merely recognizes the existence of certain isocyanates. Ulrich does not teach one of ordinary skill in the art how to select particular prepolymers to form a polyurethane compound. There is nothing in Ulrich which would teach or suggest to one of ordinary skill in the art how to form the claimed blend of prepolymers set forth in claim 1. In fact, Ulrich is totally silent on the point. Clearly, Ulrich says nothing about forming a polyurethane compound which has a first component which is a blend of different polyether based MDI prepolymers, which prepolymers have a different diphenylmethane diisocyanate content, and a second component comprising an amine curing agent consisting of a

blend of diamines. As a result, it does not cure the deficiencies of the primary Gajewski reference.

There is absolutely nothing which would motivate one of ordinary skill in the art to combine Gajewski and Ulrich in the manner suggested by the Examiner. There is nothing in Ulrich would lead one of ordinary skill in the art to believe that one could obtain an improved polyurethane compound by providing the claimed first component. The rejection is nothing more than a hindsight rejection where the only motivation for combining the references comes from Appellants' teachings.

Claim 4 states that each of the first and second components when in an uncured state is liquid at room temperature. Claim 4 is allowable over Gajewski and Ulrich for the same reasons as claim 1 and further, because, the references do not teach or suggest that the first and second components, when in an uncured state, are in a liquid form at room temperature.

2. *Patentability of Claims 1*
and 4 – 7 over Gillis et al.

Claim 1 is allowable over Gillis et al. because Gillis et al. does not teach or suggest a polyurethane compound comprising a first component and a second component, where the first component consists of a blend of different polyether based MDI prepolymers with each of the prepolymers has a different diisocyanate content, and a second component comprising an amine curing agent consisting of a blend of diamines.

Gillis et al. is directed to a reaction system for use in making a reaction injection molded element. The system comprises the following components: (A) a polyisocyanate composition comprising a reaction product of a stoichiometric excess of an organic polyisocyanate and (i) a polymeric polyol having an average nominal hydroxyl functionality greater than 2 and an average hydroxyl equivalent weight of from about 500 to about 5000, and (ii) a polymeric polyamine having an average nominal primary and/or secondary amino functionality of from about 2 to about 3 and an average amine equivalent of from about 500 to about 5000, the polyol and the polyamine having glass transition temperatures below room temperature, and (B) an isocyanate-reactive composition comprising at least one imino-functional compound which has at least one-imino group that is directly reactive toward isocyanates.

Claim 1 is allowable over Gillis et al. because the "consisting of" language in the claim as used in connection with the second component precludes the inclusion of the at least one imino-functional compound which is essential to the reaction system of Gillis et al. In fact, the at least one imino-functional compound is the heart of Gillis et al.'s invention and one of ordinary skill in the art, reading Gillis et al. would not create a compound without it. Gillis et al. does not teach or suggest a polyurethane compound having the claimed first component and the claimed second component set forth in claim 1. There can be no doubt that Gillis et al. is directed to something other than the polyurethane compounds of the present invention.

The Examiner attempts to create the impression that Gillis et al. teaches an embodiment which is nothing more than prepolymer PC-1A and DETDA. Gillis et al. does not teach or suggest such an embodiment. The Examiner can not point to a single example or any statement in Gillis et al. which teaches forming a compound not having at least one imino-functional compound as part of the second component. All of the embodiments of Gillis et al.'s system, including that of Example I, include at least one imino-functional compound as part of the second component. In fact, the second component in Example I also includes a catalyst and an internal mol release agent – all excluded by the aforementioned "consisting of" language of claim 1. With regard to the Examiner's assertion that PC-1A includes DETDA, this is not true. The composition of PC-1A is set out in column 20, lines 57 – 61 and it does not include DETDA.

Claim 4 is allowable over Gillis et al. because Gillis et al. does not teach or suggest that the claimed first component and the claimed second component are both liquid at room temperature when in an uncured state. In fact, Gillis et al. acknowledges that at least one of his components contains up to 40% of its weight in solid fillers or reinforcements. See column 18, lines 53 – 58 of Gillis et al. The Examiner's assumption that all of Gillis' components are in a liquid state at room temperature is without foundation in the Gillis et al. patent.

Claim 5 is allowable because contrary to the Examiner's statement, PC-1A has an NCO content of 14.7% (see column 20, line 58 of Gillis et al.). Claim 5 calls for the NCO content of the first component to be in the range of 11.5% to 14.5%. PC-1A does not meet this limitation.

Claim 6 is allowable because the NCO content of the PC-1A embodiment being relied upon by the Examiner is outside the range of 12% to 14%.

Claim 7 is allowable because the NCO content of the PC-1A embodiment being relied upon by the Examiner is not about 13%.

For these reasons, claims 1 and 4 – 7 are allowable over Gillis et al.

CONCLUSION

For the reasons set forth above, the Board is hereby respectfully requested to reverse the rejections of claims 1 and 4 – 7 and remand the application to the Primary Examiner in Group Art Unit 1711 for issuance.

EXTENSION OF TIME

A one (1) month extension of time request is enclosed herewith.

FEES

The Commissioner is hereby requested to charge the Appeal Brief Fee and the fee for the one month extension of time to Deposit Account No. 21-0279. Should the Commissioner determine that an additional fee is due, he is hereby authorized to charge said fee to Deposit Account No. 21-0279.

Respectfully submitted,

John W. Putnam et al.

By _____
Barry L. Kelmachter
BACHMAN & LaPOINTE, P.C.
Reg. No. 29,999
Attorney for Appellant

Telephone: (203)777-6628 ext. 112
Telefax: (203)865-0297
Email: kelmachterb@bachlap.com

Date: October 23, 2003

IN TRIPLICATE

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313" on **October 23, 2003.**

_____
Nicole Motzer

APPENDIX A

1. A polyurethane compound comprising a first component and a second component, said first component consisting of a blend of different polyether based MDI prepolymers, each of said polyether prepolymers having a different diphenylmethane diisocyanate content and said second component comprising an amine curing agent consisting of a blend of diamines.

4. The polyurethane compound according to claim 1, wherein each of said first and second components when in an uncured state is liquid at room temperature.

5. The polyurethane compound according to claim 1, wherein said first component has a NCO content in the range of from 11.5% to 14.5%.

6. The polyurethane compound according to claim 5, wherein said NCO content is in the range from 12% to 14%.

7. The polyurethane compound according to claim 5, wherein said NCO content is about 13%.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appl. No. : 10/082,956 Confirmation No. 7018
Appellants : John W. Putnam et al.
Filed : February 26, 2002
TC/A.U. : 1711
Examiner : Rachel F. Gorr

Docket No. : EH-10252B(02-216)
Customer No. : 34704

MS Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

APPEAL BRIEF

Dear Sir:

This is an appeal to the Board of Patent Appeals and Interferences from the final rejection of claims 1 and 4 – 7, dated April 28, 2003, issued by the Primary Examiner in Group Art Unit 1711.

REAL PARTY IN INTEREST

The real party in interest is United Technologies Corporation of Hartford, Connecticut.

RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellants, Appellants' legal representative, or Assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

STATUS OF CLAIMS

Claims 1 and 4 – 7 stand rejected and are on appeal. Claims 2, 3, and 8 – 26 have been cancelled. Appendix A attached hereto is a copy of the claims on appeal.

STATUS OF AMENDMENTS

No amendment was filed subsequent to the issuance of the final rejection. A terminal disclaimer was filed subsequent to the issuance of the final rejection. As a result of the filing of the terminal disclaimer, the rejection on grounds of obvious type double patenting has been overcome. See Advisory Action mailed September 9, 2003, paragraph 3.

SUMMARY OF THE INVENTION

The present invention relates to an improved polyurethane compound which has utility as a potting compound in fan exit guide assemblies of commercial gas turbine engines. See page 1, lines 7 – 10 of the specification. The polyurethane compound of the present invention has improved quality, manufacturing properties, and adhesive strength. Further, the polyurethane compound can be mixed in manufacturing friendly automated equipment and can be packaged without the introduction of air. See page 2, lines 2 – 16 of the specification.

In accordance with the present invention, a polyurethane compound or system is provided which contains a formulation of polyurethane prepolymers mixed with an aromatic amine curing agent in a volumetric mix ratio of from about 0.9:1 to about 1:1. The formulation of polyurethane prepolymers consists of a blend of different polyethers based on diphenylmethane diisocyanate or, in other words, a blend of prepolymers made from polyethers and diphenylmethane diisocyanate. The aromatic amine curing agent preferably comprises a blend of oligomeric diamines and an aromatic diamine with a catalytic component. Both of the blends, when in an uncured state, are liquid at room temperature. Polyether type prepolymers are important for moisture and solvent resistance. Polyurethane based MDI prepolymers or MDI polyurethane prepolymers are important for health and safety reasons, for being liquid at room temperature, and for offering better adhesion properties. The aromatic amine curing agent is important for best thermal stability and moisture resistance. See page 2, lines 17 – 36 of the specification.

The polyurethane prepolymer blend is a blend of different polyethers based on diphenylmethane diisocyanate, which blend has an NCO content in the range of from about 11.5% to about 14.5%, preferably from about 12% to 14%, and most preferably about 13%. As used in the application, the term "NCO content" means the grams of NCO per gram of prepolymer. See page 3, lines 4 – 10 of the specification.

The different polyethers which are used to form the blend preferably comprises two types of diphenylmethane diisocyanates. The first type of polyether has a NCO content in the range of from about 13.5% to about 16.5%, preferably in the range of from about 14% to 16%, and most preferably about 15%, a density of about 1.2 g/cm^3, and an equivalent weight of about 286 g/mol. See page 3, lines 25 – 30 of the specification. The second type of polyether has a NCO content in the range of from about 9.7% to 12.7%, preferably from about 10.2% to 12.2%, and most preferably about 11.2%, a density of about 1.06 g/cm^3, and an equivalent weight of about 375 g/mol. See page 4, lines 1 – 5 of the specification.

The polyurethane prepolymer formulation is prepared by combining the two polyether types at room temperature, stirring them to obtain a homogeneous solution, de-aerating at room temperature, and handling using standard dry conditions for moisture sensitive urethanes. The two polyethers are mixed in volumetric amounts sufficient to provide the resulting blend with the aforementioned NCO content. See page 4, lines 7 – 14 of the specification.

The aromatic amine curing agent is formed from two oligomeric aromatic diamines and a third aromatic diamine. See page 4, lines 19 – 21 of the specification. The first of the oligomeric diamines preferably has a density of about 1.04 g/cm^3 and an equivalent weight of about 235 g/mol. The second of the oligomeric diamines preferably has a density of about 1.04 g/cm^3 and an equivalent weight of about 415 g/mol. The third diamine is preferably characterized by chlorine groups attached to it and has a density of 0.95 g/cm^3 and an equivalent weight of about 190 g/mol. See page 4, line 33 to page 5, line 18 of the specification.

The aromatic amine curing agent is formed by heating the second oligomeric diamine to a temperature of 180 degrees Fahrenheit to melt the semisolid. The third amine is added and the mixture is heated to 180 degrees Fahrenheit until the third amine is completely dissolved. The first amine is then added and heated to 180 degrees Fahrenheit until the first amine is completely dissolved. The mixture is then cooled to room temperature and used for packaging. At room temperature, the mixture is a flowing liquid. See page 5, lines 19 – 31 of the specification.

The polyurethane prepolymer blend and the aromatic amine curing agent, when in an uncured state, are both liquid at room temperature. This allows them to be prepackaged in cartridges without the introduction of air into the cartridges. This greatly reduces the number of voids in the final part and leads to the production of higher quality parts. The fact that both components are liquid also allows them to be mixed in a manufacturing friendly automated

equipment. To form the final polyurethane compound, the blended polyurethane prepolymer and the blended amine curing agent can be passed through a mixing nozzle in a volumetric mix ratio of blended polyurethane prepolymer to blended amine curing agent in the range of from about 0.9:1 to about 1:1, preferably from about 0.95:1 to 1:1. See page 5, line 32 to page 6, line 11 of the specification.

The polyurethane compound formed by the blended components possesses extremely high adhesive strength to aluminum, titanium, polyetherimide, epoxy/graphite composites, and other aerospace materials. The polyurethane compound also has good damping characteristics for gas turbine engine applications. Still further, the polyurethane compound has good heat resistance up to 250 degrees Fahrenheit and is resistant to most gas turbine engine fluids. See page 6, lines 12 – 23 of the specification.

PRIOR ART RELIED UPON BY EXAMINER

Patent No.	Patentee	Issue Date
4,910,279	Gillis et al.	March 20, 1990
5,223,599	Gajewski	June 29, 1993

Ulrich, Chem. Tech. of Isocyanates, 1996, p. 368

REJECTIONS OF RECORD ON APPEAL

1. Claims 1 and 4 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,223,599 to Gajewski in view of the Ulrich publication

2. Claims 1 and 4 – 7 stand rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,910,279 to Gillis et al.

ISSUES

1. Is the rejection of claims 1 and 4 on obviousness grounds proper, and if proper, does it teach or suggest the claimed invention.

2. Is the subject matter of claims 1 and 4 – 7 anticipated by the '279 patent to Gillis et al.

GROUPING OF CLAIMS

Claims 1 and 4 – 7 do not stand or fall together. Each claim is believed to be independently patentable.

ARGUMENT

1. *Patentability of Claims 1 and 4 over Gajewski over Ulrich*

Claim 1 on appeal is directed to a polyurethane compound comprising a first component and a second component. The first component consists of a blend of different polyether based MDI prepolymers. Each of the prepolymers has a different diphenylmethane diisocyanate content. The second component comprises an amine curing agent consisting of a blend of diamines.

The rejection of claims 1 and 4 over Gajewski and Ulrich fails because the Examiner has failed to set forth a *prima facie* case of obviousness. As noted by the Examiner, Gajewski differs from the subject matter of claim 1 by showing diphenylmethane diisocyanate in a list with six other preferred diisiocyanates for making prepolymers. The Examiner notes that in the examples, Gajewski uses TDI. Thus, the Examiner recognizes that Gajewski does not teach or suggest the claimed first component having different diphenylmethane diisocyanate contents.

The Examiner attempts to cure this deficiency in Gajewski by taking the position that it would be obvious to replace TDI with MDI in polyurethanes in view of the Ulrich publication. The rejection fails because Ulrich is non-enabling in so far as manufacturing polyurethane compounds of the type set forth in claim 1. Ulrich merely recognizes the existence of certain isocyanates. Ulrich does not teach one of ordinary skill in the art how to select particular prepolymers to form a polyurethane compound. There is nothing in Ulrich which would teach or suggest to one of ordinary skill in the art how to form the claimed blend of prepolymers set forth in claim 1. In fact, Ulrich is totally silent on the point. Clearly, Ulrich says nothing about forming a polyurethane compound which has a first component which is a blend of different polyether based MDI prepolymers, which prepolymers have a different diphenylmethane diisocyanate content, and a second component comprising an amine curing agent consisting of a

blend of diamines. As a result, it does not cure the deficiencies of the primary Gajewski reference.

There is absolutely nothing which would motivate one of ordinary skill in the art to combine Gajewski and Ulrich in the manner suggested by the Examiner. There is nothing in Ulrich would lead one of ordinary skill in the art to believe that one could obtain an improved polyurethane compound by providing the claimed first component. The rejection is nothing more than a hindsight rejection where the only motivation for combining the references comes from Appellants' teachings.

Claim 4 states that each of the first and second components when in an uncured state is liquid at room temperature. Claim 4 is allowable over Gajewski and Ulrich for the same reasons as claim 1 and further, because, the references do not teach or suggest that the first and second components, when in an uncured state, are in a liquid form at room temperature.

2. *Patentability of Claims 1*
and 4 – 7 over Gillis et al.

Claim 1 is allowable over Gillis et al. because Gillis et al. does not teach or suggest a polyurethane compound comprising a first component and a second component, where the first component consists of a blend of different polyether based MDI prepolymers with each of the prepolymers has a different diisocyanate content, and a second component comprising an amine curing agent consisting of a blend of diamines.

Gillis et al. is directed to a reaction system for use in making a reaction injection molded element. The system comprises the following components: (A) a polyisocyanate composition comprising a reaction product of a stoichiometric excess of an organic polyisocyanate and (i) a polymeric polyol having an average nominal hydroxyl functionality greater than 2 and an average hydroxyl equivalent weight of from about 500 to about 5000, and (ii) a polymeric polyamine having an average nominal primary and/or secondary amino functionality of from about 2 to about 3 and an average amine equivalent of from about 500 to about 5000, the polyol and the polyamine having glass transition temperatures below room temperature, and (B) an isocyanate-reactive composition comprising at least one imino-functional compound which has at least one-imino group that is directly reactive toward isocyanates.

Claim 1 is allowable over Gillis et al. because the "consisting of" language in the claim as used in connection with the second component precludes the inclusion of the at least one imino-functional compound which is essential to the reaction system of Gillis et al. In fact, the at least one imino-functional compound is the heart of Gillis et al.'s invention and one of ordinary skill in the art, reading Gillis et al. would not create a compound without it. Gillis et al. does not teach or suggest a polyurethane compound having the claimed first component and the claimed second component set forth in claim 1. There can be no doubt that Gillis et al. is directed to something other than the polyurethane compounds of the present invention.

The Examiner attempts to create the impression that Gillis et al. teaches an embodiment which is nothing more than prepolymer PC-1A and DETDA. Gillis et al. does not teach or suggest such an embodiment. The Examiner can not point to a single example or any statement in Gillis et al. which teaches forming a compound not having at least one imino-functional compound as part of the second component. All of the embodiments of Gillis et al.'s system, including that of Example I, include at least one imino-functional compound as part of the second component. In fact, the second component in Example I also includes a catalyst and an internal mol release agent – all excluded by the aforementioned "consisting of" language of claim 1. With regard to the Examiner's assertion that PC-1A includes DETDA, this is not true. The composition of PC-1A is set out in column 20, lines 57 – 61 and it does not include DETDA.

Claim 4 is allowable over Gillis et al. because Gillis et al. does not teach or suggest that the claimed first component and the claimed second component are both liquid at room temperature when in an uncured state. In fact, Gillis et al. acknowledges that at least one of his components contains up to 40% of its weight in solid fillers or reinforcements. See column 18, lines 53 – 58 of Gillis et al. The Examiner's assumption that all of Gillis' components are in a liquid state at room temperature is without foundation in the Gillis et al. patent.

Claim 5 is allowable because contrary to the Examiner's statement, PC-1A has an NCO content of 14.7% (see column 20, line 58 of Gillis et al.). Claim 5 calls for the NCO content of the first component to be in the range of 11.5% to 14.5%. PC-1A does not meet this limitation.

Claim 6 is allowable because the NCO content of the PC-1A embodiment being relied upon by the Examiner is outside the range of 12% to 14%.

Claim 7 is allowable because the NCO content of the PC-1A embodiment being relied upon by the Examiner is not about 13%.

For these reasons, claims 1 and 4 – 7 are allowable over Gillis et al.

CONCLUSION

For the reasons set forth above, the Board is hereby respectfully requested to reverse the rejections of claims 1 and 4 – 7 and remand the application to the Primary Examiner in Group Art Unit 1711 for issuance.

EXTENSION OF TIME

A one (1) month extension of time request is enclosed herewith.

FEES

The Commissioner is hereby requested to charge the Appeal Brief Fee and the fee for the one month extension of time to Deposit Account No. 21-0279. Should the Commissioner determine that an additional fee is due, he is hereby authorized to charge said fee to Deposit Account No. 21-0279.

Respectfully submitted,

John W. Putnam et al.

By _____
Barry L. Kelmachter
BACHMAN & LaPOINTE, P.C.
Reg. No. 29,999
Attorney for Appellant

Telephone: (203)777-6628 ext. 112
Telefax: (203)865-0297
Email: kelmachterb@bachlap.com

Date: October 23, 2003

IN TRIPLICATE

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313" on **October 23, 2003.**

_____
Nicole Motzer

APPENDIX A

1. A polyurethane compound comprising a first component and a second component, said first component consisting of a blend of different polyether based MDI prepolymers, each of said polyether prepolymers having a different diphenylmethane diisocyanate content and said second component comprising an amine curing agent consisting of a blend of diamines.

4. The polyurethane compound according to claim 1, wherein each of said first and second components when in an uncured state is liquid at room temperature.

5. The polyurethane compound according to claim 1, wherein said first component has a NCO content in the range of from 11.5% to 14.5%.

6. The polyurethane compound according to claim 5, wherein said NCO content is in the range from 12% to 14%.

7. The polyurethane compound according to claim 5, wherein said NCO content is about 13%.